

Technical Branch
Instrumentation and Controls Group
Water Utilities Series

ELECTRONIC CONTROLS SPECIALIST

01/00 (REB)

Summary

Under general supervision, inspect, test, modify, adjust and repair electronic tele-metering and process control systems for water and wastewater facilities.

Typical Duties

Assemble, install, maintain and operate supervisory control and data acquisition (SCADA) system equipment and allied monitoring, sensing, transmitting and recording instruments and apparatus. Involves: participating in network equipment design, selection and development, including interface protocols and system backbones by testing signal-to-noise ratios, measuring signal strength, and checking data throughput and protocol compatibility, using laptop or desktop computers, and radio frequency spectrum or protocol analyzers; reviewing plans and specifications of electronic control systems to insure compliance with operational needs; adjusting and calibrating instruments to ensure functioning within standards; configuring process control schemes, computer input and output points, displays and control graphics; developing and entering programs, including those for field devices, using personal or laptop computers, or hand-held programming, calibration or other interface to machine instruments, or vendor-specific software and hardware; verifying data transmission by reading messages on computer screen; making approved engineering changes to meet functional specifications; preparing schematic drawings and sketches to reflect changes or alterations made in instruments, circuits and systems; furnishing information to be used in preparation of annual budget and long range capital improvement program; requisitioning personnel, supplies, materials and equipment as authorized; maintaining inventory of a wide variety of electronic and electromechanical spare and repair parts; conferring with EPWU management, consultants or outside contractors on technical aspects of solutions to existing and new problems, and to represent EPWU interests while providing support to outside contractors during new project start-ups.

Troubleshoot hardware malfunctions and software problems. Involves: investigating and adjusting complaints related to electronic control systems; detecting, diagnosing and correcting problems in electronic process control and radio system equipment, including microwave radios, programmable logic controllers, field device connections, and converters or other remote terminal units, using various testing devices; tracing electronic circuitry and components to locate defective parts in monitoring systems; determining suitable solutions by using test equipment, schematics and maintenance manuals; adjusting, repairing and replacing electrical components such as motors, electric valves, switch gears, relays, alarm systems and other electromechanical devices; measuring and verifying tank levels, water pressure or other physical characteristics, using transducers, performing scheduled preventive maintenance.

Lead a small team of technical and trades personnel if assigned. Involves: scheduling and assigning tasks, issuing written and oral instructions; checking work for exactness, neatness, and conformance to policies and procedures; providing designated technical guidance to coworkers to overcome difficulties encountered in performing duties; furnishing supervisor with information gained regarding observed work behaviors of team members.

Perform related incidental duties contributing to realization of unit or team objectives as required. Includes: substituting for supervisor, coworkers, or subordinates as qualified and within authorized limits by carrying out specified functions to maintain continuity of ordinary operations, if delegated; providing designated support for projects or activities overseen by higher graded non-supervisory personnel as instructed; explaining and demonstrating work performed to assist supervisor in orienting and training less knowledgeable employees; engaging in assignments pertaining to functions of other positions for training purposes under close supervision; logging activities, and preparing and submitting recurring or special status reports and otherwise assisting with designated administrative functions; keeping tools, equipment and work area orderly, safe and clean.

Minimum Qualifications

Training and Experience: Graduation from high school or equivalent, supplemented by completion of an instrumentation or electronics technology course from an accredited institute, plus four (4) years electronic assembly, installation, maintenance and repair experience; including one (1) year working with process control and monitoring equipment in a process control facility; or an equivalent combination of training and experience.

Knowledge, Abilities and Skills: Considerable knowledge of: water utility or similar SCADA systems; electric and electronic components and testing. Good knowledge of: distributed process control, programmable logic controller or similar industrial computer systems equipment; common industrial electronics diagnostic programs and programming language software.

Ability to: run common diagnostic programs to locate system malfunctions; read and interpret testing equipment manuals and schematics; react quickly and make sound decisions in emergencies; troubleshoot and identify field problems and take corrective action; maintain awareness and learning to apply new knowledge of the latest technology in the field; follow oral and written instructions; provide non-supervisory training and direction of the work of assigned lower graded team members; check work for adherence to rules and regulations, including quality, quantity, timeliness and safety; establish and maintain effective relationships with fellow employees, officials and the general public; express oneself clearly and concisely both orally and in writing; maintain files and prepare reports.

Skill in safe operation and care of: personal computers; specialized electronic testing equipment; diagnostic tools and troubleshooting equipment; hand tools; motor vehicle.

Physical Requirements: Occasional bending, stooping, climbing ladders, and moving objects (averaging up to 50 pounds); mobility over uneven terrain in a field environment; exposure to varying weather conditions; driving through City traffic.

Licenses and Certificates: Valid Texas Class "C" Driver's License or equivalent license issued by another state.

Special Requirements: Subject to call back, and working rotating shifts, flexible hours, weekends, holidays, and extended hours.

Director of Personnel

Department Head

OFFICIAL